Day	Inquiry Questions	Focus Topic	Learning Objectives	Learning & Assessment Outcomes	Learning Activities	Formative Tasks	TWM Characteristics
Day 1	Factual: What is estimation? Conceptual: How does estimation help? Debatable: Can estimation be more useful than exact calculations?	Estimating with Integers	7Ni.01	- I can explain what estimation is and how to estimate the sum and difference of integers. - I can solve real-life problems by estimating answers and checking if my estimate is reasonable. - I can describe how estimation helps me decide whether my answer makes sense.	* Estimation Warm-up: Students are given integer problems to estimate (e.g., –47 + 19). They compare the estimates with actual calculations. * Quick Check Cards: Pairs use estimation task cards to match expressions with the best estimate range. * Real-World Scenario: Groups solve everyday situations (e.g., shopping budgets) using estimation before calculating exact answers * Poster Creation: Each group creates a “Smart Estimation” poster to show tips and strategies for estimating accurately.	* Prior knowledge check * Quick check cards * Exit ticket	Specialising: Students estimate specific integer problems (e.g., –47 + 19) and check whether their estimate satisfies a reasonable range. They choose examples and explain how they know their estimate makes sense. The poster task also helps them reflect on and select estimation strategies that work across multiple cases.
Day 2	Factual: What is the order of operations? Conceptual: Why is the order necessary? Debatable: Should students always use brackets for clarity?	Order of Operations	7Ni.02	- I can explain and apply the correct order of operations when solving numerical expressions. - I can use brackets, indices, and different operations to evaluate complex numerical	* Number Tiles Exploration: Hands-on use of tiles to build and simplify expressions with brackets. * BODMAS Puzzle: Students solve expressions in a jigsaw puzzle format where only correctly ordered solutions reveal a final picture. * Compare Strategies: Groups are given different solving strategies for the same expression and must justify which is correct.	* Prior knowledge check * Error spotting * Class discussion-Exit ticket	Specialising: Students apply BODMAS to specific problems and verify if their answer matches the expected outcome. They analyse whether a method satisfies the correct order. The comparison task of solving strategies deepens their understanding by

				expressions. - I can compare different orders of solving and explain why following the correct sequence matters.	* Create a Poster: Students make a "BODMAS vs. PEMDAS" poster explaining the order of operations and giving worked examples.		requiring them to reason through one method being valid and others not.
Day 3	Factual: What do brackets and indices mean? Conceptual: How do they affect outcomes? Debatable: Is accuracy more important than efficiency?	Brackets and Indices	7Ni.02	- I can understand the purpose of brackets and indices in mathematical expressions. - I can solve problems that include brackets and powers (like squares and cubes). - I can explain how changing the position of brackets or the use of powers changes the answer.	* Brackets Investigation: Students manipulate expressions with and without brackets to see how placement changes results. * Index Laws Card Sort: Learners match powers with simplified results and use visuals to explain rules (e.g., squaring a negative). * Story Math Task: Students write and solve a short story problem involving powers and brackets (e.g., calculating energy use, growth, or area). * Class Discussion: Use prompts like "How does using brackets help clarify your work?" and "Is it always needed?"	* Prior knowledge check * Exit ticket * Error analysis worksheet * Student-generated examples	Generalising: Learners manipulate brackets and powers and look for consistent effects (e.g., how $(2 + 3)^2$ is different from $2 + 3^2$). The index card sort and math story task promote pattern recognition and applying exponent rules across varied contexts. Specialising is also reinforced when students compare how placing brackets changes the expression's value.
Day 4	Factual: What are the laws of arithmetic? Conceptual: How does understanding number properties help?	Simplifying calculations with decimals	7Nf.04	- I can use common factors to simplify fractions in calculations. - I can apply arithmetic laws to rewrite and simplify	* Vocabulary Match-Up: Students match terms (commutative, associative, distributive) with visual and numeric examples. * Error Spotting: Given flawed worked examples, students must find and correct mistakes in calculations. * Sorting Activity: Students categorise	* Prior knowledge check * Quiz * Peer review * Discussion of spotted errors	Generalising: Through activities like matching laws and correcting errors, students identify common patterns in how operations behave (e.g., how the distributive law applies to all forms like $a \times (b + c)$).

	Debatable: Should math rules always be followed strictly?			calculations containing decimals and fractions. - I can follow the order of operations to solve problems with decimals and fractions.	numerical expressions according to the law applied. * Real-Life Problem: Students use common factors, laws of arithmetic, and order of operations to simplify multi-step calculations involving decimals and fractions from a cooking or shopping context.		They sort expressions by law and observe repeating structures in calculations with decimals and fractions.
Day 5	Conceptual: How does understanding different operations make problem-solving easier? Debatable: Can rules be adapted in real-life math situations?	Real-World Application & Conjectures	7Ni.01, 7Nf.04, 7Ni.02	- I can use my knowledge of integers, order of operations, and arithmetic laws to solve a real-world problem. - I can create and present a solution that shows clear steps and reasoning. - I can make and explain a mathematical conjecture based on patterns or results I observed.	* Group Problem-Solving: Students choose from real-world problems (e.g., designing a garden, calculating travel costs) that require use of estimation, decimals, brackets, and arithmetic laws. * Poster or Slide Presentation: Each group creates a presentation showing their process, steps, and final solution. * Conjecture Writing: Individually, students write a conjecture (e.g., “Is estimation always less accurate when negative numbers are involved?”) and test it with examples. * Gallery Walk: Students rotate and give peer feedback on each group’s poster or conjecture using sticky notes.	* Presentation rubric * Peer feedback * Final reflection form	Conjecturing: Students make and test mathematical statements (e.g., “If I always subtract a larger number from a smaller one, the answer is always negative”) by trying multiple examples and drawing conclusions. They also specialise when solving specific real-world tasks and generalise when explaining if their solution method can be applied to other similar problems.